In the Claims

Please amend the claims as follows:

1. (Currently amended) A chimeric polypeptide comprising:
a HIV virus coat polypeptide sequence and a viral receptor polypeptide sequence, wherein the HIV virus coat polypeptide sequence has a bonding affinity for the viral receptor polypeptide sequence, wherein the HIV virus coat polypeptide sequence and the viral receptor polypeptide sequence are linked by an amino acid spacer of sufficient length to allow the HIV virus coat polypeptide sequence and the viral receptor polypeptide sequence to bind to each other, and wherein the HIV virus coat polypeptide is gp120 comprising a mutated furin cleavage site on the C terminus of gp120.

2. (Currently amended) A chimeric polypeptide comprising:
a virus coat polypeptide sequence and a viral receptor polypeptide sequence, wherein the coat polypeptide sequence and the receptor polypeptide sequence are linked by an amino acid spacer of sufficient length to allow the coat polypeptide sequence and the viral receptor polypeptide sequence to bind to each other ~~The chimeric polypeptide according to claim 1~~, wherein the chimeric polypeptide has an amino acid sequence selected from the group consisting of SEQ ID NO: 13, SEQ ID NO: 2, SEQ ID NO: 4 and SEQ ID NO: 6.

3. (Currently amended) A chimeric polypeptide comprising:
a virus coat polypeptide sequence and a viral receptor polypeptide sequence, wherein the coat polypeptide sequence and the receptor polypeptide sequence are linked by an amino acid spacer of sufficient length to allow the coat polypeptide sequence and the viral receptor polypeptide sequence to bind to each other ~~The chimeric polypeptide according to claim 1~~, wherein the virus coat polypeptide sequence is selected from the group consisting of SEQ ID NO: 24, SEQ ID NO: 30 and SEQ ID NO: 28.

4. (Original) The chimeric polypeptide according to claim 3, where the receptor polypeptide sequence is selected from the group consisting of SEQ ID NO: 26 and SEQ ID NO: 20.

5. – 7. (Currently cancelled)

8. (Original) The chimeric polypeptide of claim 1, wherein the receptor is a CD4 polypeptide sequence.

9. (Original) The chimeric polypeptide of claim 8, wherein the CD4 polypeptide sequence comprises the Dl and D2 domains.

10. (Original) The chimeric polypeptide of claim 1, wherein the spacer has from about 5 to about 200 amino acids.

11. (Original) The chimeric polypeptide of claim 1, wherein the spacer comprises a peptidomimetic sequence.

12. (Original) The chimeric polypeptide of claim 1, further comprising a heterologous domain.

13. (Original) The chimeric polypeptide of claim 12, wherein the heterologous domain is selected from the group consisting of: a tag, an adhesin, and an immunopotentiating agent.

14. (Currently amended) The chimeric polypeptide of claim 12, wherein the heterologous domain is ~~selected from the group consisting of SEQ ID NO: 11 and~~ SEQ ID NO: 32.

15. (Original) The chimeric polypeptide of claim 2, further comprising a pharmaceutically acceptable carrier.

16. (Original) The chimeric polypeptide of claim 4, further comprising a pharmaceutically acceptable carrier.

17. -35. (Currently Cancelled)

36. (Currently amended) A method for inhibiting virus infection in a subject comprising administering to the subject an effective amount of the chimeric polypeptide of claim 4~~, or a polynucleotide encoding the chimeric polypeptide of claim 4,~~ to inhibit virus infection of a cell expressing a virus co-receptor polypeptide, thereby inhibiting virus infection.

37. (Original) The method of claim 35, wherein the virus is an immunodeficiency virus.

38. (Original) The method of claim 35, wherein the subject is a human.

39. (Currently amended) A method for producing an immune response to a virus in a subject comprising administering to the subject an effective amount of the chimeric polypeptide of claim 2, ~~or a polynucleotide that encodes the chimeric polypeptide of claim 2,~~ to produce an immune response to the virus.

40. (Currently cancelled)

41. (Original) The method of claim 39, wherein the subject is a human.

42. (Original) The method of claim 39, wherein the immune response comprises an antibody.

43. (Original) The method of claim 42, wherein the antibody binds to an epitope produced by the binding of the virus coat polypeptide sequence and the receptor polypeptide sequence.

44. (Original) The method of claim 42, wherein the antibody neutralizes the virus *in vitro*.

45. (Original) A method for identifying an agent that inhibits an interaction between a HIV virus and a virus co-receptor comprising the steps of: (a) contacting the chimeric polypeptide of claim 2 with a virus co-receptor under conditions allowing the chimeric polypeptide and the co-receptor to bind, in the presence and absence of a test agent; and (b) detecting binding in the presence and absence of the test agent, wherein decreased binding in the presence of the test agent thereby identifies an agent that inhibits binding between the virus and the virus co-receptor.

46. (Original) The method of claim 45, wherein the virus is an immunodeficiency virus.

47. (Original) The method of claim 45, wherein the immunodeficiency virus co-receptor is a CCR5 or CXCR4 polypeptide sequence.

48. (Original) The method of claim 45, wherein the virus co-receptor is present on the surface of an intact cell.

49. (Currently amended) A method for identifying an agent that inhibits an interaction between a HIV virus and a virus receptor comprising the steps of: (a) contacting the chimeric polypeptide of claim 2

with a test agent; and (b) detecting binding between the virus coat polypeptide sequence and the viral receptor polypeptide sequence, wherein a decreased amount of binding in the presence of the test agent identifies an agent that inhibits binding between the virus and the virus receptor.

50. (Original) The method of claim 49, wherein the test agent is selected from the group consisting of a peptide, an organic molecule, an antibody, an antiviral, an immunodeficiency virus receptor or functional fragment thereof.

51. (Original) The method of claim 50, wherein the immunodeficiency virus receptor polypeptide is a CD4 polypeptide sequence.

52. (Currently amended) A method for identifying a chimeric polypeptide sequence that inhibits virus infection of a cell comprising the steps of:
(a) contacting a cell susceptible to a virus infection with an infectious HIV virus particle in the presence and absence of the chimeric polypeptide sequence of claim 2; and
(b) determining whether the chimeric polypeptide inhibits virus infection of the cell, thereby identifying a chimeric polypeptide sequence that inhibits HIV virus infection.

53. – 54. (Currently cancelled)

55. (Previously presented) The chimeric polypeptide according to claim 4 comprising SEQ ID NO: 30, SEQ ID NO: 26 and further comprising IgG1 as an immunopotentiating agent.

56. (Previously presented) A method for reducing HIV infection in a subject comprising:
administering to the subject an effective amount of the chimeric polypeptide of claim 55, to reduce virus infection of a cell expressing a HIV co-receptor polypeptide.

57. (Previously presented) A method for enhancing an immune response to HIV in a subject comprising administering to the subject an effective amount of the chimeric polypeptide of claim 55 to enhance an immune response to HIV.